Studies in Rural Finance

Economics & Sociology
Occasional Paper No. 1840

DIFFERENCES IN PERFORMANCE OF RURAL FINANCIAL MARKETS IN TAIWAN AND THE PHILIPPINES

by

Dale W Adams

H. Y. Chen

and

Mario B. Lamberte

June 15, 1991

Agricultural Finance Program
Department of Agricultural Economics
and
Rural Sociology
The Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210-1099

Abstract

In the early 1950s Taiwan and the Philippines had many economic similarities, including rural poverty. By the early 1990s, however, farmers in Taiwan were much more prosperous than were rural residents in the Philippines. Likewise, rural financial markets in Taiwan were performing much better than those in the Philippines. Authors argue that this difference in performance was largely due to the dissimilar ways financial markets were used in the two countries. They conclude that it will be difficult for farmers in the Philippines to effectively compete with farmers in Taiwan without the support of a much larger and more efficient rural financial market.

DIFFERENCES IN PERFORMANCE OF RURAL FINANCIAL MARKETS IN TAIWAN AND THE PHILIPPINES

by

Dale W Adams, H.Y. Chen, and Mario B. Lamberte

Taiwan and the Philippines are neighbors who shared many similarities immediately after World War II. Their natural resources were comparable, both relied mainly on agriculture, both suffered typhoons, both were twice colonized, both soon emerged from colonial status, both received sizable foreign aid for a time after the War, and both had access to expanding markets in surrounding areas and in the U.S. Forty years ago people living in rural areas in both countries were poor by most measures.

Despite these similarities there have been striking differences in the economic performance of the two countries since World War II, especially in agriculture. In the early 1990s rural Taiwan exhibited many of the characteristics of a high income country while many rural areas in the Philippines still endured grinding poverty. A comprehensive explanation of these differences involves examining numerous elements: some known, some unknown, and some unknowable. In the following discussion we focus on only one of these factors, the way formal rural financial markets (FRFMs) were used to support development in the two countries. We argue that FRFM performance explains a significant part of the difference in rural development. Before describing FRFMs in the Philippines and Taiwan, however, we state our definition of successful FRFMs.

Measuring Success

Disagreement persists over how success should be measured in FRFMs. Advocates of projects that target loans at a particular group usually measure the impact of loan use on <u>borrowers</u> in the form of number of loans granted to target groups, inputs purchased with loans, output increased through borrowing, or changes in income and employment associated with borrowing. Critics of this approach argue for alternative measures that concentrate, instead, on the performance of <u>providers</u> of financial services and on <u>depositors</u>. They further argue that traditional credit-impact studies often overestimate project benefits and underestimate costs, particularly the costs imposed on financial infrastructure.

The disagreement stems from conflicting views about the role of FRFMs in development. Supporters of targeting contend that loans promote the use of new technology, induce farmers to increase output, and stimulate farmers to make long-term investments. They further argue that concessionary loans off-set the effects of other adverse conditions or policies and that cheap loans are an equitable way of assisting poor people.

Critics, in contrast, argue that interest rates on loans do little to alter farmers' production decisions and that attempts to redistribute income through concessionary loans result in less equitable income distribution. Additionally, they contend that futile attempts to stimulate output via loans, or to use financial markets to distribute subsidies, damage the fundamental contribution that FRFMs make to development: allocating resources more efficiently by intermediating among surplus and deficit economic units.

New Measures of Success

Since financial markets are ineffective in altering borrowers' production decisions and in allocating subsidies to poor people one might better look for indications of success, not among the activities of borrowers, but rather in the ability of FRFMs to provide a sustained flow of services to an expanding number of people. At least four measures might be used in this regard: the number of people served by these markets, the transaction costs incurred by participants, loan recovery, and the magnitude of deposit mobilization. Using these criteria we can identify only a small number of successful rural credit efforts in low income countries, the FRFM in Taiwan being one of them.

Background on Taiwan

Most observers agree that Taiwan has experienced exceptional progress in rural areas since World War II.[1] The country did an extensive and successful land reform in the early 1950s, adjusted to and then controlled rapid inflation during the same period, and walked a fine line between taxing agriculture and providing strong incentives for farmers. Rapid expansion in non-farm employment, combined with steady growth in agriculture, gave farm households sharp increases in income the past several decades. In 1989 the average farm household made less than one-third of its income from farming (Department of Agriculture and Forestry 1990, p. 356). The flexibility of Taiwan's agriculture is particularly impressive; it is able to shift resources among a relatively large number of products, depending on economic conditions and export markets. In part, this flexibility is the result of an efficient FRFM that provides funds to facilitate change.

---

[1]The United States provided significant amounts of foreign assistance to Taiwan from 1948 to 1963, especially in agriculture. Aside from this early help, nevertheless, Taiwan received virtually no foreign assistance from other countries or international agencies. The paucity of foreign assistance may have caused Taiwanese policy makers to stress self-help activities, such as deposit mobilization, more than has been the case in countries receiving large amounts of foreign assistance.

The Rural Finance System

As can be noted in Table 1, a number of organizations in Taiwan furnish formal rural loans. The Land Bank, the Farmers' Bank, and the Cooperative Bank provide almost two-thirds of the funds lent to agriculture, while the Farmers' and Fishermens' Associations provide funds for more than one-third of the loans. These associations, however, administer a substantial part of the loans extended by other agencies and are the foundation of Taiwan's FRFM. Most of the associations also accept deposits.

In addition, a number of commercial banks, savings companies, a large postal savings system, and various cooperatives also provide deposit services to rural people. In mid-1990 the Farmers' and Fishermens' Associations alone were mobilizing more than three times as much money as they lent out of their own funds, and they also had deposits that exceeded the total amount of loans made to farmers and fishermen by the entire FRFM.

Farmers' and Fishermens' Association

The history of the Farmers' Associations can be traced to the early 1900s when the Japanese introduced cooperatives to Taiwan (Adams, Chen and Hsu). The Japanese, in turn, borrowed and modified the idea from the Germans during the Meiji Reformation. The 268 Farmers' Associations are multi-service organizations. An additional 39 township associations and one provincial organization service fishermen. Most of these associations have credit departments and they also have an average of more than two branch credit offices each. In 1989 there were 782 thousand regular members and 391 thousand associate members in the Farmers' Associations. Most of the farmers and fishermen on the island were members, many of them had deposits in associations, and associations provided popular financial services to many of the non-farmers living in rural areas.

In December 1989 these associations had the equivalent of more than US$18 billion in deposits, and had year-end outstanding balances on loans of US$ 5 billion. Throughout most of the past four decades the associations paid and received positive real rates of interest on their deposits and loans. In most years the credit departments of the associations realize a profit on their transactions that in 1989 amounted to more than US$185 million. Association loan recovery problems have been within the limits experienced by commercial banks on non-agricultural loans.

These associations play an important part in rural development. There are two reasons for their strength and durability. First, Taiwan has excellent farmers and policy makers who have done a remarkable job of promoting agricultural growth through enlightened policies. Large investments in new farm technologies and rural infrastructure reinforced these efforts. This made many farmers creditworthy and provided rural people more funds for deposits.

Table 1: Formal Agricultural Loans in Taiwan by Lending Agency, Outstanding Balances, December 31, 1989

Lending Agency	Outstanding Balance Million US$	Percentages
Financial Institutions		
Farmers Bank	2,872	20
Land Bank	1,966	14
Cooperative Bank	3,523	25
Farmers Associations	5,059	36
Commercial Banks and Central Bank	351	2
Government Agencies		
Council of Agriculture	422	3
Other Agencies*	17	**
	--------	-----
Total	$14,210	100

Source: Council of Agriculture. "Agricultural Credit in Taiwan, Republic of China." Unpublished report prepared by the Council of Agriculture, Taipei, Taiwan, May 1990.

* Includes the Provincial Food Bureau, the Taiwan Sugar Corporation, and the Provincial Tobacco and Wine Monopoly Bureau.

** Less than one percent

Note: In 1989 about 27 NT$ were equal to one US$.

Second, it is also clear that officials were judicious in the restraints they placed on rural financial markets.[2] The government made little use of concessionary rediscount facilities to fund targeted lending programs through farmers' associations.[3] This forced associations to depend mainly on deposits and share capital to fund lending. This, in turn, resulted in few political intrusion into association lending and a strong feeling among members that they owned the association.

Even more importantly, the associations operate as serious financial institutions that make loans on the basis of creditworthiness. During the early 1950s, when Taiwan had serious problems with inflation, the government was pragmatic in allowing financial institutions to adjust nominal rates of interest so that both savers and borrowers had expectations of positive real rates of interest (Irvine and Emery). It would have been easy for policy makers to wreck the associations during the 1950s by insisting on fixed nominal rates of interest on both loans and deposits so that savers were taxed by inflation. Extensive use of loans as vehicles for transferring subsidies or for targeting would likewise have been damaging.

Farmers and fishermen in Taiwan use their associations as one-stop shopping and service centers. The associations provide virtually all of the financial services needed by their members. They also supply most agricultural inputs, handle a substantial part of the product marketing, are a source for technical information and advice, and even provide health services. These combined services allow the associations to realize both scale and scope economies, particularly in lending. Members also realize benefits from being able to conduct a number of transactions--both loans and deposits, for example--in a single visit, thus reducing their overall transaction costs.

At various times the government funded a few targeted credit programs that carried concessionary interest rates. The handful of programs that currently exist are largely administered by the Council of Agriculture and interest rate subsidies from the government's budget are paid directly to lending agencies participating in the program. Especially in recent years the targeted credit programs have made up a small portion--much less than 10 percent--of the total agricultural credit portfolio in the country.

---

[2]While policy makers did not distort rural financial markets with regulations, they did provide prudential supervision to maintain the integrity of the system.

[3]In the early 1950s about two-thirds of the farmers' loans in Taiwan came from informal sources, but by 1981 this had declined to one-third. Initially, the government, mainly through the Joint Commission on Rural Reconstruction (JCRR)--later called the Council of Agriculture--provided a large share of the money used to fund FRFMs. In 1953 JCRR provided almost 70 percent of the total formal agricultural loans in the country. This percentage rapidly declined as deposits were mobilized and as other financial institutions grew. The Taiwanese were particularly effective in inserting government funds into FRFMs in ways that did not discourage deposit mobilization.

Background on the Philippines

Rural credit has a long and checkered history in the Philippines.[4] Early in the first Colonial Period, for example, the Spanish Government provided loans to farmers as an incentive to produce tobacco. Later, in 1907, the U.S.-founded Philippines Commission attempted to induce the formation of new banks in rural areas. Still another private sector initiative emerged in the Rural Credit Law of 1915 that authorized a system of agricultural credit cooperative associations similar to the current-day credit unions. These cooperatives provided relatively few loans to farmers because they mobilized few deposits. Still another attempt to provide more formal rural loans was made in 1916 with the chartering of the Philippine National Bank. Over the next few years the bank made a few large loans to farmers but it failed to evolve into a significant source of loans for operators of small farms who made up a large majority of the rural population.

Since World War II The Philippines is unique among the low income countries in the large number of studies that have been done on its rural financial market.[5] These studies chronicle the frustrations associated with many rural credit programs. The first major post-war step in building a rural financial system in the Philippines was the formation of the Rehabilitation Finance Corporation (later renamed the Development Bank of the Philippines) in 1946, in part, to finance agriculture. Virtually all of the funds lent by the Corporation were provided by government and donor agencies, but few of its loans went to operators of small farms.

Rural Private Banks

Two major steps were taken in 1952 to provide formal loans in rural areas. The first was an Act in June authorizing the formation of private rural banks with half of their equity coming from government funds managed by the Central Bank (Miravite). The Central Bank was also given the responsibility of promoting and supervising these small banks. By 1956 nearly two-thirds of the loans made by these banks was for agricultural purposes. Understandably, many of the loans were made to farmers who were relatively well-to-do. Unlike most of the earlier efforts to promote agricultural credit, the new rural banks were authorized to accept deposits.

An important feature of the early development of these banks was the patient and steady efforts that went into their formation. Eventually these efforts paid off in the establishment of more than a thousand rural banks. They provided valuable financial

---

[4]We draw on Sacay's dissertation for this historical background.

[5]Most of these studies, especially since the mid-1970s, have been sponsored by the Technical Board on Agricultural Credit and its successor agency the Agricultural Credit Policy Council. Comprehensive summaries of this research are provided by Agabin and others, Lamberte and Lim, and Sacay and others.

services to a gradually expanding number of clients until the early 1970s when their lending mushroomed under a rice promotion program (Masagana 99). Unfortunately, many of these banks later became insolvent as an increasing proportion of the government financed loans were not repaid. In the early 1990s about 400 of these banks were still providing financial services in rural areas, 400 were being restructured, and the rest were closed, merged, or moribund.

Cooperatives

Another step in build rural financial infrastructure also occurred in 1952 with the formation of an Agricultural Credit and Cooperative Financing Administration (ACCFA).[6] It was a funding and promoting agency for local Farmers' Cooperative Marketing Associations (FaCoMas) that were later formed around the country. ACCFA lent money to FaCoMas for on-lending to FaCoMa members. The FaCoMas were responsible for both making and recovering farmer loans. A significant number of operators of small farms received formal loans under ACCFA-FaCoMas. Just six years later in 1958, a total of 484 FaCoMas with nearly 300 thousand members had been organized, certainly a rapid rate of growth--maybe too rapid.

While the ACCFA lending program expanded apace with the expansion in the FaCoMas, loan recovery problems dogged these efforts. Typically, new FaCoMas reported high loan recovery rates for several years and then defaults increased rapidly, finally rising to such a high level that the system collapsed. Even at it zenith, however, the ACCFA-FaCoMa system only reached about 11 percent of the farmers in the Philippines.

Several lessons can be drawn from the ACCFA experience. In retrospect, many of the seeds of its failure were sown at its conception. Most importantly, it depended too heavily on government funds that borrowers felt little obligation to repay. In addition, the lending program expanded too rapidly and too little emphasis was given to making loans on the basis of creditworthiness. Further, no attempt was made to mobilize voluntary deposits and the procedures used imposed substantial transaction costs on borrowers. Because many of the loans arrived long after they were requested, borrowers viewed ACCFA and the FaCoMas as undependable sources of funds. In addition, cheap credit policies made it impossible for cooperatives to cover their real costs of extending loans plus covering defaults.

Masagana 99

The Philippines next mounted a major agricultural credit effort in 1973 around the Masagana 99 rice development program. While the program included improved rice

---

[6]Again, we draw heavily on Sacay's dissertation for information in this section.

varieties, fertilizer subsidies, technical assistance, and some attention to rice prices, a major part of the effort was keyed to rapid increases in the availability of cheap loans. Since the agricultural cooperative system was weak and atrophied as a result of the ACCFA-FaCoMa debacle, the Government turned to the fledgling rural banking system. Most of the funds were supplied by the Central Bank through concessionary rediscount lines. The program reached its zenith in 1974-75 when about one-third of all rice farmers in the country received Masagana loans, 530 thousand individuals in total.

Several years into the program, however, the old specter of loan defaults began to haunt Masagana 99 much as it did ACCFA-FaCoMa. Because of these problems, by 1982-83 the number of borrowers participating in the Masagana program declined to less than 70 thousand, only one-ninth of the number reached in 1974-75 (Esguerra). Most of the individuals who dropped out of the program were forced to do so because they failed to repay their loans.

Studies of the Masagana 99 program show that rice output increased in association with the increase in formal lending (Sacay and others). These studies generally concluded, however, that the huge increases in formal credit associated with the program had relatively little to do with the increase in rice output. Instead, it was the availability of fertilizer and its price, along with increased use of improved rice varieties and technologies that explained most of the increase in rice output. The sharp declines in the real value of formal agricultural credit in the country after 1982 was accompanied by steady increases in agricultural output, suggesting an ambiguous relationship between credit and output.

As was the case with ACCFA-FaCoMA, Masagana 99 diminished rather than enhanced the capacity of FRFMs. The damage done far exceeded the several hundred million US$ worth of funds that were lent but not repaid under the program. A substantial increase in foreign exchange debt, for example, was incurred to finance loans under Masagana 99, more than half of the rural banks became insolvent because of their participation in the program, and all rural banks were induced to ignore deposit mobilization because of the availability of large amounts of cheap funds from the Central Bank (Blanco and Meyer).[7] In addition, three to four hundred thousand Filipino farmers had their formal creditworthiness destroyed by the program. While there were about 2,500 banking offices in rural areas in 1986, as Blanco and Meyer note, 40 percent of the rural municipalities in the Philippines still did not have a single banking office in the mid 1980's.

---

[7]Blanco and Meyer note that the volume of formal rural loans exceeded the volume of rural bank deposits--deposits made outside the Manila metropolitan area--during the 1970s and early 1980s. Beginning in 1984, however, deposits exceeded the volume of rural loans. This was due to a contraction of rural lending and some increases in deposits caused by enhanced incentives to save.

Recent Conditions

The Philippines started the 1980s with its FRFM in tatters. Many of the rural banks were insolvent. The general decline of the Filipino economy and additional inflation during the mid-1980s exacerbated these problems and caused a sharp contraction in the real as well as relative amounts of funds available for formal agricultural loans in the country. Economic stress, burdensome foreign debts and rising inflation forced the Philippine government to reevaluate its rural credit policies. This was accompanied by a loosening of interest rate restrictions, elimination of many of the lines of credit targeted to agriculture, and less support in general for agricultural loans from the central government.

As can be noted in Table 2, in 1989 private banks provided over 80 percent of the formal loans made to agriculture in the Philippines. It can be also noted that the total value of the outstanding balance on agricultural production loans in the Philippines amounted to less than one billion US$ at the end of 1989. This was less than 7 percent of the total value of loans made by the institutions covered in Table 2 and amounted to less than 14 percent of the total value of agricultural production in the country during the year. The latter percentage was down substantially from similar figures in the 1960s that ranged between 20 and 25 percent.

While reliable estimates are not available on the number of rural people who had sustained access to FRFMs in the Philippines in the early 1990s, our guess is that it did not amount to over 10 to 15 percent of the rural households. In large measure the decline in availability of formal financial services in rural areas has been only partially made up by an expansion in volume of informal finance. Recent studies suggest that the relative importance of informal finance has increased substantially over the past decade (Agabin and others, and Bautista and Magno).

In most cases market rates of interests are now applied to both loans and deposits handled by formal lenders, banks again have incentive to mobilize deposits in rural areas, and the rural banking system began to revive in the early 1990s. While concessionary credit programs for agriculture are being phased out, targeted credit programs in the non-agricultural sector have been expanded. There will likely be continued pressure, however, on the government from politicians to reinstate cheap credit programs for agriculture.

It appears the Government has adopted most of the policy recommendations that might allow FRFMs to again grow; it has stopped doing a number of things that made formal rural financial markets operate badly. In the early 1990s the country was in a much better position to stimulate the growth of a formal rural financial market that is efficient, equitable, and sustainable. It had some of the financial infrastructure in place in rural areas and had most of the proper policy environment necessary for renewed growth of formal financial markets.

Table 2. Agricultural Production Loans Outstanding in the Philippines, by Institution, December 31, 1989

Institution	Amount US$ (million)	Percent Share
Government Banks	175	19
Phil. Nat. Bank	127	14
Land Bank of Phil.	48	5
Private Banks	721	81
Pvt. Commercial Banks	382	43
Sav. and Mortgage Banks	23	2
Pvt. Development Banks	59	7
Rural Banks	243	27
Sav. and Loan Assoc.	14	2
Total	896	100

Source: Agricultural Credit Policy Council "Final Report on 1989 Year End Agricultural Production Credit." Unpublished report prepared by the Council, 1990.

Note: Peso values converted to US$ using exchange rate of 25 pesos = one US$.

Differences in Performance

It is humbling to see the time, patience, and restraint it takes to build efficient financial infrastructure in rural areas. It is discouraging to see how quickly a financial intermediary can be enfeebled by events that reduce its clients' incomes, or by policies that distort or repress its operations. Policy makers in Taiwan had ample opportunities and numerous precedents in other countries that could have led them to make choices which would have seriously damaged the performance of its FRFM. It is much to their credit that they avoided these pitfalls and made mostly right choices. In our opinion, policy makers in the Philippines should have emulated much earlier many of FRFM policies used in Taiwan.

In part, the formal rural financial system in Taiwan was successful because it consorted with economically healthy hosts--Taiwan's policy makers did not heavily "tax" farming and placed priority on developing agriculture. This included investing in substantial amounts of rural infrastructure that reduced transaction costs in rural areas, including the costs of doing financial activities. The FRFM in Taiwan would not have been nearly so successful if it had been exposed to the economic stress endured by Filipino farmers off-and-on over the past four decades and if much of Taiwan's investment in infrastructure had gone into urban areas as it did in the Philippines. First, and foremost, financial markets succeeded in Taiwan because many of their clients prospered.

The performance of financial markets, however, is also strongly influenced by policies and practices imposed on them. A comparison of these policies between Taiwan and the Philippines provides valuable evidence on the ingredients needed for success:

- First, deposit mobilization was prominent in Taiwan, while it was ignored in the Philippines.

- Second, incentives for depositors were also featured in Taiwan; real rates of interest on deposits were almost always positive, while depositor incentives were generally ignored in the Philippines, until recently.

- Third, rural deposits allowed Taiwan to place decreasing reliance on government and donor funds for agricultural credit and, thus, to suffer less political intrusions in lending. This, in turn, heightened intermediaries' incentives to cultivate clients, rather than funding sources, and allowed Taiwan to avoid the default disease that has plagued agricultural credit programs in the Philippines.

- Fourth, Taiwan granted loans on the basis of creditworthiness, recovered loans, and kept loan transaction costs low. This resulted in clients viewing the lenders as serious and durable businesses. Under these conditions clients had strong incentives to repay loans and to make deposits in order to sustain and to expand their working relationship with the lender. In contrast, many of the agricultural credit efforts in the Philippines were correctly viewed by farmers as being transitory efforts.

• Fifth, Taiwan did not use loans as an income redistributing mechanism. Most borrowers in Taiwan only achieved a gain through the profits realized on enterprises funded with borrowed resources. In contrast, the Philippines effected major income transfers to borrowers--too often borrowers of large amounts--through concessionary interest rates and loan defaults.

• Sixth, only a small and declining proportion of the loans in Taiwan were targeted or based on a formula crafted in the capital city. This allowed lenders to maintain low transaction costs and also to make the loans more desirable for borrowers. Extensive loan targeting in the Philippines by enterprise, by type of input, and by income class imposed substantial transaction costs on both borrowers and lenders and thereby diminished the value of loan services to borrowers.

• Seventh, and closely related to the previous two points, policy makers in Taiwan were concerned with building durable and efficient financial intermediaries. Policy makers in the Philippines--strongly supported by various donor agencies--in contrast, paid little attention to the long-run viability of financial institutions serving rural areas.

• Eighth, the Philippines has gone through various quests for ideal rural financial institutions while Taiwan patiently strengthened the system it inherited from Japan and the Mainland.

• Ninth, the Philippines made extensive use of concessionary rediscount lines in the Central Bank to fund numerous targeted credit programs in rural areas while Taiwan did not. These cheap rediscount facilities vitiated most of the incentives for rural deposit mobilization in the Philippines.

• Tenth, the Philippines used the Central Bank to both promote and to regulate its rural banks, while the Taiwanese did promotion largely outside the Central Bank. Mixing promotion and regulation in the same agency is a recipe for conflict of interest.

Concluding Comments

Success in rural financial markets can be transitory if policy makers are not flexible and enlightened about their handling of rural financial markets and agriculture in general. A substantial increase in the rate of inflation, combined with sticky interest rate policies, for example, can quickly turn a successful rural financial system into shambles. Also, a misguided policy maker or donor who opens concessionary rediscount lines for agricultural lenders can quickly destroy the incentives intermediaries have to seek deposits. Policy makers can likewise do major damage to the system by raising reserve requirements on deposits to the point where it is unattractive for intermediaries to seek deposits. It is far easier and quicker to destroy a financial system than it is to build one. The various burned out shell of formal rural financial intermediaries in the Philippines are haunting reminders of this.

Taiwan has built a sustainable FRFM that reaches most of the people living in rural areas. It has also mobilized huge amounts of deposits, has been innovative in reducing transactions costs, and has maintained high rates of loan recovery. In contrasts, the Philippines has suffered through a number of transitory rural credit efforts that left behind a debilitated rural financial system. Legacies of these efforts are chronic loan recovery problems, few deposits mobilized, high transaction costs, and relatively few people in rural areas having access to FRFMs. Since World War II the Philippines has exhausted a large amount of money on its FRFM and ended up with a system that is, in value terms, only 1/20th the size of the system in Taiwan. Of the 700 thousand families in Taiwan who are defined as farm families in 1989, only about 10 percent are classified as full-time farmers (Department of Agriculture and Forestry). If half of the Filipinos are farmers and their average family size is five or six individuals, then between three and four million farm families are in the Philippines. Regardless of the measure used, the Philippines had many more farmers in the late 1980s than did Taiwan, maybe as many as 10 times. With a larger FRFM and a much smaller number of farmers, it is little wonder that Taiwanese farmers can borrow funds to create a capital intensive agriculture, while farmers in the Philippines cannot. Clearly, the agricultural sector in the Philippines will find it impossible to make the major investments necessary over the next several decades to compete with countries such as Taiwan without a much larger and more dependable FRFM.

REFERENCES

Adams, D.W, H.Y. Chen and C.Y. Hsu. "Rural Capital Markets and Small Farmers in Taiwan, 1952-1972." Small Farmer Credit In East Asia. A.I.D. Spring Review of Small Farmer Credit, Volume 11, Agency for International Development, Washington D. C., June, 1973.

Agabin, Meliza, Mario Lamberte, Mahar Mangahas and Ma. Alcestis A. Mangahas. "Integrative Report on the Informal Credit Market in the Philippines." PIDS Working Paper No. 89-10, Philippine Institute of Development Studies, Manila, Philippines, June, 1989.

Agricultural Credit Policy Council (ACPC). "1988 Year End Formal Agricultural Credit Report." Monograph No. 89-01, ACPC, Manila, Philippines, April, 1989.

Blanco, Rhenee and Richard L. Meyer. "Rural Deposit Mobilization in the Philippines, 1977-1986." Working Paper Number 88-15. Philippine Institute for Development Studies, Manila, Philippines, October, 1988.

Council of Agriculture. "Agricultural Credit in Taiwan, Republic of China." Unpublished report prepared by the Council of Agriculture, Taipei, Taiwan, May, 1990.

Department of Agriculture and Forestry (DAF). Taiwan Agricultural Yearbook: 1990. Nantau, Taiwan: DAF, 1990.

Esguerra, Emmanuel F. "An Assessment of the Masagana 99 Credit Subsidy as an Equity Measure." Philippine Review of Economics and Business 18(1981):168-191.

Irvine, Reed J. and Robert F. Emery. "Interest Rates As An Anti-Inflationary Instrument in Taiwan," National Banking Review 4(1966):29-39.

Lamberte, Mario B. and Joseph Lim. "Rural Financial Markets: A Review of Literature." Staff Paper No. 8702, Philippine Institute for Development Studies, Manila, Philippines, 1987.

Miravite, Lorenzo F. Rural Banking in The Philippines. Third Edition. Manila: Rural Bankers Legal Reference Center, 1976.

Sacay, Orlando de Jesus. "An Analysis of the Crop Loan Program of the Agricultural Credit and Cooperative Financing Administration." Unpublished Ph.D dissertation, Cornell University, 1961.

Sacay, Orlando J., Meliza H. Agabin and Chita Irene E. Tanchoco. Small Farmer Credit Dilemma. Manila: National Publishing Cooperative Inc., 1985.